DATA DISC

Plug-in Memories for Minicomputers

Computer Automation 216
Computer Automation 816
Data General Nova
Data General Supernova
DEC PDP-8   PDP-9   PDP-9L
          PDP-11   PDP-15
EAI 640
GRI 909

Hewlett-Packard 2114   2115   2116
Honeywell H112   H316   H516
Interdata 3   Interdata 4
Lockheed MAC-16   MAC-16JR
Raytheon 703   704   706
Systems Engineering Labs 810A   810B
Varian 620
XDS CE16   CF16

Data Disc memory systems for minicomputers

Data Disc offers a complete line of reliable, economical disc memory systems for use as secondary storage units with minicomputers. These Model 1700 disc memory systems consist of a Model 7200 disc memory unit, a controller/interface for plug-in operation on a computer data channel, and support software. Twenty-one different disc memory systems are available for use with over 36 minicomputers.

Data Disc memory systems are available with capacities ranging from 32,000 to 4.2 million words. Rapid access time of 17 milliseconds and high-speed data transfer rates of up to 250,000 words per second make these head-per-track disc memories ideally suited to:

    Core extension
    Program/overlay storage
    Memory swapping for real time or time-share

Disc Memory System Organizations

Many different organizations are available. Systems operate on programmed data transfer, data multiplex, or direct memory access data channels.

Data is addressed on the disc either as a single word or as a block of words.

The controller interface printed circuit cards are located either in one or more I/O slots within the computer, or in separate rack-mountable chassis with self-contained power supply.

Systems software consists of complete disc operating systems programs developed by the minicomputer manufacturer; disc operating systems offered directly by Data Disc; or limited software (disc diagnostic and a disc drive program).

Detailed descriptions of each Data Disc 1700 memory system are available.

Performance

Data Disc systems are being used for temporary storage in key-to-tape systems; as swapping and library memories in time-sharing systems; on-line memories in power utility systems; and in many other critical applications. If you would like to discuss our disc memory performance with a Data Disc customer, there are more than 1,000 installations throughout the country.

Expandability

Data Disc 7200 memory units are designed for easy expansion. A small-capacity system readily accepts additional heads and electronics. Single-unit capacities range from 32,000 to more than 1 million words.

Disc Operating Systems

Typical operating systems have the facility for cataloging source and object programs (including BASIC or FORTRAN and edit programs); for assembling via the disc rather than paper tape; and for automatic transfer of binary loader from the disc into core memory.

Data Protection

Every Data Disc memory system is equipped with three data-protection features to safeguard your data:

1. All data is recorded on the disc with error codes, and all data is checked for errors during read-back from the disc.

2. Selected tracks on the disc can be locked out to prevent the computer from writing on them, unless a manual override switch is actuated to allow changing the data.

3. The memory is also protected against data loss during power interruption, through power sequencing during start-up and shut-down.

Availability

Most Data Disc 1700 memory systems are available for 60-day delivery. Prices, delivery, technical assistance, and additional specifications are available from the Data Disc sales office in your area — see back cover. Disc memory units and memory systems are immediately available for demonstration and evaluation.

plug-in disc memories for your minicomputer

Minicomputer Manufacturer	Minicomputer Model	Data Disc Memory System	Memory Capacity Words	Priced From *
Computer Automation	216 816	1718	65K to 1048K	$ 7,730
Data General	Nova Supernova	1770	49K to 1568K	6,200
Data General	Nova Supernova	1771	65K to 1048K	6,930
Digital Equipment Corporation	PDP-8 Family	1708	262K to 1048K	12,500
Digital Equipment Corporation	PDP-8 Family	1714	65K to 4194K	8,500
Digital Equipment Corporation	PDP-8 Family	1732	32K to 262K	6,500
Digital Equipment Corporation	PDP-9 PDP-9L PDP-15	1705	41K to 1311K	11,400
Digital Equipment Corporation	PDP-11	1712	65K to 1048K	7,130
EAI	640	7200	40K to 360K	Sold by EAI.
GRI	909	1721	65K to 524K	7,300
Hewlett-Packard	2114 2115 2116 without DMA	1709	32K to 524K	5,800

Attractive quantity discounts are available. Service Contracts are less than 1% per month.

Correct balance between forces at all parts of the Micro-Series magnetic heads is accomplished with a Data Disc-developed production test gage.

Performance characteristics are measured before each 7200 disc memory is released for extensive environmentally-controlled quality-assurance tests.

Minicomputer Manufacturer	Minicomputer Model	Data Disc Memory System	Memory Capacity Words	Priced From *
Hewlett-Packard	2114 2115 2116 with DMA	1757	46K to 736K	$ 6,700
Honeywell	H316 H516	1717	32K to 524K	6,700
Honeywell	H112	1723	65K to 1048K	6,100
Interdata	3 4	1720	98K to 1573K	6,700
Lockheed	MAC-16 MAC-16JR	7200	32K to 524K	Sold by Lockheed
Raytheon	703 704 706	7200	50K to 400K	Sold by Raytheon
Systems Engineering Labs (SEL)	810A 810B with BTC	1713	227K to 909K	19,000
Systems Engineering Labs (SEL)	810A 810B without BTC	1722	65K to 524K	7,300
Varian	620 Family	1703	32K to 524K	6,700
XDS (SDS)	CE16 CF16	1719	65K to 1048K	7,730

Price includes installation in continental USA and familiarization training.

Magnetic heads are made in this corner of our 57,000-sqft manufacturing facility in Sunnyvale, Calif.

Interior of the 7200 disc memory showing the Micro-Space head suspension in the disc's perfect surface.

what Data Disc offers you

Data Disc, a leader in magnetic disc technology, is an 8-year-old company manufacturing disc memory systems for computer memories, digital display, video, and instrumentation.

Many users have chosen Data Disc equipment, increasing our sales volume by 500% in recent years. We can now deliver more than 40 disc memories *each month*. The acceptance of Data Disc equipment is largely due to the fact that we make our own heads and discs — the critical components of disc memories. Other disc memory companies are adopting our Micro-Space™ recording techniques and components: IBM manufactures heads under a Data Disc license . . . and nearly all Ampex VideoFile and Instant Replay Disc memories have been built with our discs.

We are one of the largest manufacturers of fixed-head disc memories. Over 1000 Data Disc memories now in service verify the wide acceptance of our products.
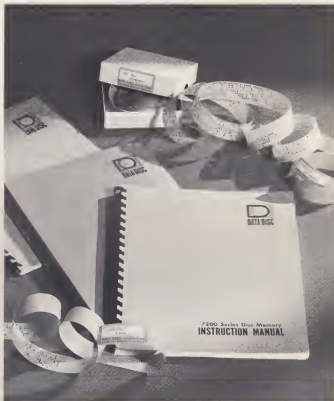
In an independent survey, OEM buyers told COMPUTER DESIGN magazine that Data Disc was their first choice for head-per-track memories.

Our product line includes head-per-track digital disc memory systems; digital display systems using disc memories to refresh raster CRT displays; video systems with disc memories for refreshing analog TV displays such as stop-action TV recording; and wideband transient recording and instrumentation memory.

PRODUCT SUPPORT

Installation. All initial installations are made by Data Disc field service engineers, who perform a system acceptance test with you and instruct you in using the system and its software. These engineers are available for subsequent installation work at a modest charge.

Field Service. Data Disc maintains a small, well-trained staff of regional field service engineers. Their services are available on an annual contract or on-call basis. A disc memory inventory is also maintained in our sales offices for use as replacement units to minimize your system downtime.
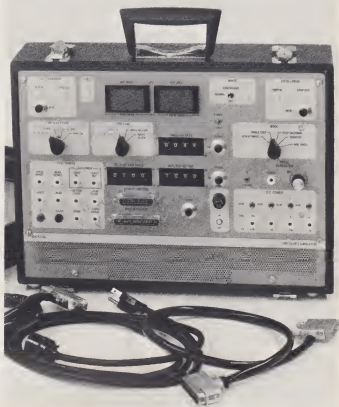

Documentation. Extensive product documentation is supplied, including manuals for instruction, reference, and service. They are written in such detail that they can be included directly in an OEM product support package.

Design Flexibility. All Data Disc memory units are electrically compatible, permitting system expansion any time you need more storage capacity.

Product Confidence. A two-year warranty covers all standard Data Disc products. Before shipment, each memory unit is operated at least 7 days with a computer . . . and on the final day of computer test, 10 billion bits are written and read without error.

Customer Training. Courses in product operation and service are available at our California plant or in your own facility.

Test Equipment. We have developed special tools and test equipment for our own and OEM customers' field service personnel. It includes our Computer Simulator, a portable test instrument used to assess disc status, rapidly showing if a problem is in a memory unit or elsewhere. It will also write clock and sector tracks. These instruments may be purchased by users who want to provide their own service.

OTHER DATA DISC PRODUCTS:

6500 Graphic Display System is a time-shared computer display system which provides up to 32 text/graphics displays using ordinary TV monitors. Many displays share a single disc refresh memory. Each display is made up of over a quarter-million picture elements.

Video Disc Recorders are used for storing television pictures from any source — broadcast, industrial CCTV, X-ray systems, scanning electron microscopes, etc. From one to 900 frames may be stored in a disc memory. The stored images may be retrieved in sequence in slow, fast or stop motion, or at random.

Instrumentation Disc Recorders capture high frequency transient signals with bandwiths from dc to 6 MHz and play them back repetitively for viewing or computer analysis. Transients from one microsecond to 20 seconds long can be captured and retained indefinitely by the disc.

DATA DISC SALES OFFICES AND REPRESENTATIVES

New England
Data Disc
Boston, Mass.
(617) 267-6346

Northeast
Bartlett Associates, Inc.
White Pains, N. Y.
(914) 949-6476
Wayne, Penn.
(215) 688-7325
Bethesda, Md.
(301) 656-3061

North Central
Data Disc
Lakewood, Ohio
(216) 228-0624

Midwest
Data Disc
Minneapolis, Minn.
(612) 938-4488

Southeast
Data Disc
Winter Park, Fl.
(305) 241-3761

South Central
Arnold Barnes Co.
Austin, Texas
(512) 454-4371
Dallas, Texas
(214) 235-4541
Houston, Texas
(713) 523-7333

Southwest
Data Handling Co.
Albuquerque, N. M.
(505) 268-0928

West
Data Disc
Palo Alto, Calif.
(415) 326-7602

Canada
Data Disc
Ottawa, Ontario
(613) 234-4797

Japan
Kyokuto Boeki Kaisha, Ltd.
Tokyo, Japan
(270) 7711

DATA DISC, INC./Computer Products Division
1275 California Ave., Palo Alto, Calif. 94304 • (415) 326-7602 • TWX 910-373-1248

DATA DISC, INC.
COMPUTER DISC MEMORIES

Looking for the right digital disc memory systems for your computer? Want large or small capacities at a low cost? Let me introduce you to the Data Disc 7000 series of Disc Memory Systems.

Data Disc, a leading manufacturer of <u>Disc Memory Systems,</u> offers you third generation, general purpose disc systems <u>featuring .5 to 17 million bits per disc,</u> a head per track up to 128 tracks, average access times of 16.7 milliseconds, up to a 4 Megabit data rate, and TTL logic for interfacing to any digital computer. These units have a transient data-error rate of 10^{10} bits mean free time between errors and use a closed loop air system to insure their reliability over a long period of time. <u>The cost can be lower than one tenth of a cent per bit</u>!

Data Disc also has <u>complete plug compatible systems</u> which include up to four discs and a controller for directly adding disc memory capabilities to the HP 2114B, 2115A, 2116A/B; Varian 620i; DEC's PDP-8, 8I, 8L, 9, 12; Data General's Nova, and other computers. These systems are complete, including service, software, installation and a one year warranty.

Besides computer disc memories, Data Disc offers discs and systems for digital displays, alphanumerics, graphics, gray shades and color displays (Bartlett Bulletin No. 102), and multiple channel Video-analog-recording using both the head/track and moveable head approach. (Bartlett Bulletin No. 103)

Interested? Please contact <u>Bartlett Associates immediately</u>! As your local electronic engineering representative for Data Disc, we are interested in discussing any of your applications with you.

Bartlett Associates

Electronic Engineering Representatives

470 Mamaroneck Avenue
White Plains, N.Y. 10605
Telephone: (914) 949-6476

Home Office:
130 W. Lancaster Ave. - P.O. Box 72
Wayne, Pennsylvania
MUrray 8-7325 (Code 215)

December 7, 1970

Mr. Charles Schwenker
N.Y. State Dept. of Health
30 Russell Road
Albany, New York   12201

Dear Mr. Schwenker: REF: DATA DISC, INC.

Enclosed is a new brochure from Data Disc, Inc. describing the
Plug-in Memories for Mini Computers. I felt this might be of
interest to you and your company.

These are complete systems including disc, power supply, con-
troller, software compatibility, installation and a two year
warranty. With over 1000 discs in service, Data Disc offers
you a reliable, proven system at a cost below mainframe man-
ufacturers prices, especially in larger than minimum capacities.

Let me prove to you that this is the disc system for your re-
quirements. Fill in the enclosed card, or better yet, call me
directly!

46K — $6 700
92K — $7 550

Very truly yours,

BARTLETT ASSOCIATES, INC.

Robert H. Harlow

RHH/mg
Enc: